
CONCLUSIONS

The data from the habitat assessments described in this document indicate many segments of Juanita Creek lack the complex habitat structure that is important for sustaining a long-term, diverse salmonid population. Inadequate pool habitat (shallow pools with little cover) is likely a result of the cumulative effects of the interruption of numerous natural processes such as large woody debris recruitment, and local and basin-wide hydrologic buffering processes that interact to create these habitats.

Numerous activities associated with urbanization impact drainage basin hydrology (Booth 1991). Magnified peak flows and increased number of peak flows combined with the loss of LWD result in increased erosion rates that cause increased channel widths and depths (Hammer 1972, Leopold 1973, in Booth 1991). Bankfull width to depth ratios of the assessed reaches of Juanita Creek do not stand alone to indicate increased erosion processes. Comparing channel dimension data from this assessment to data collected previously or in the future would indicate if the channel is widening or incising. However, other indicators of channel instability were observed. An instream detention pond at NE 124th Street on segment 2 has filled with sediment over a short period of time. Lack of wood and simplified habitat are also typical of streams impacted by urbanization (Booth 1991). Restoration and conservation planning efforts need to assess, and take into account the altered processes that create and maintain instream habitat structure in this basin.

Results from other studies in the PSL region demonstrate that retention of a wide, nearly continuous riparian buffer of native vegetation has greater and more flexible potential than other options to uphold biological integrity when development increases (Horner and May 1999). In newly developing areas riparian zones can be isolated from development. In developed landscapes, such as the Juanita Creek basin, riparian zones are often more lightly developed than upland areas, and could more easily be purchased and placed into protective status. Riparian buffer retention fits nicely with other objectives, like flood protection and provision of wildlife corridors and open space. Instream habitat would benefit most from securing and protecting existing high quality riparian buffers, enhancing or restoring degraded, but undeveloped areas, and protecting developed riparian zones and upgrading the integrity of the buffer by planting native species (especially conifers) and removing invasive plants.

General forest retention throughout watersheds has also been shown to offer important potential mitigation benefits (Horner and May 1999). This should be a high priority, especially for managing growth of undeveloped and lightly developed areas of the watershed. Forest retention combined with impervious surface limitation and riparian protection efforts would likely have the best results when pursued jointly.

The foundation of any effective environmental management effort is the formulation of goals developed with firm knowledge of what the ecosystem is capable of under varying circumstances, and what it needs to flourish at specified levels. Objectives should be stated in specific and measurable terms. This study should provide a solid baseline for future management decisions based on existing conditions in Juanita Creek.